Fig.1(a)

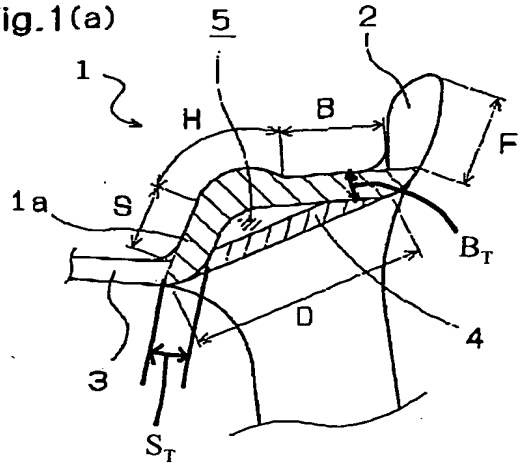


Fig.1(b)

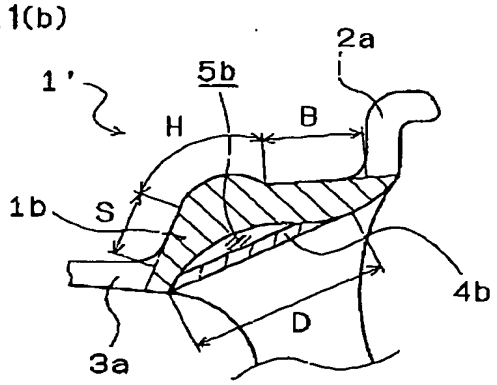


Fig.2

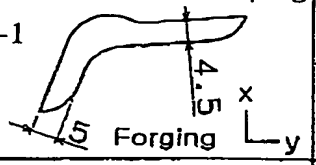
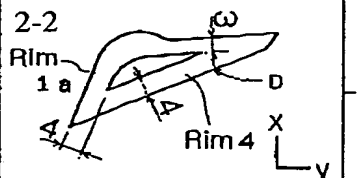
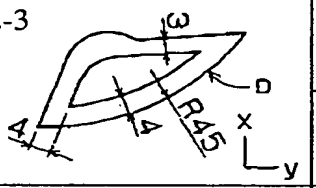
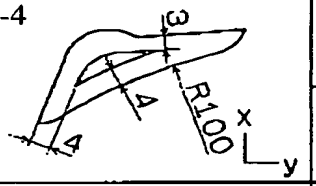
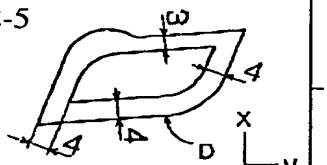
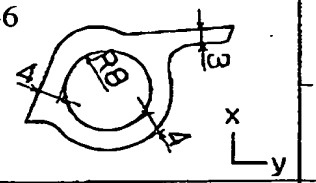
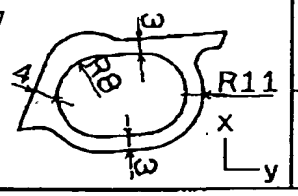
Cross-sectional shaping	Geometrical moments of inertia (mm⁴)	Aerial size of cross section (mm²)
Conventional shaping 2-1 	I x-x 31,512.2 (100%) I y-y 7,098.8 (100%)	247.6 (100%)
2-2 	I x-x 32,192.7 (102%) I y-y 8,797.28 (124%)	305.6 (123%)
2-3 	I x-x 43,122.5 (137%) I y-y 15,053.6 (212%)	345.2 (139%)
2-4 	I x-x 29,083.1 (92%) I y-y 7,608.4 (107%)	287.1 (116%)
2-5 	I x-x 52,124.1 (165%) I y-y 17,528.8 (247%)	364.6 (147%)
2-6 	I x-x 35,362.8 (112%) I y-y 22,723.6 (320%)	365.1 (147%)
2-7 	I x-x 50,266.7 (160%) I y-y 22,639.4 (319%)	354.9 (143%)

Fig.3

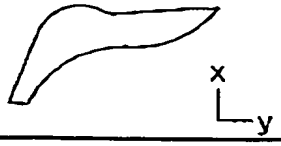
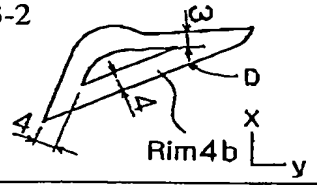
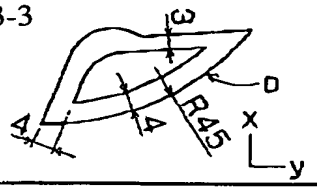
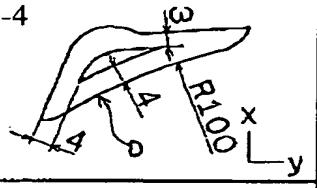
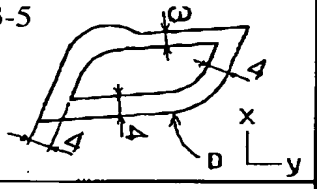
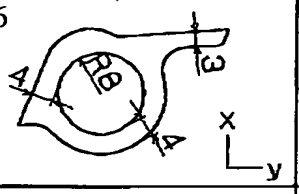
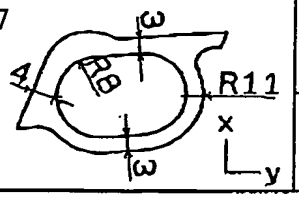
Cross-sectional shaping	Geometrical moments of inertia (mm⁴)	Aerial size of cross section (mm²)
Conventional shaping Casting 3-1 	I x-x 38,268.0 (100%) I y-y 14,054.8 (100%)	371.5 (100%)
3-2 	I x-x 32,192.7 (84%) I y-y 8,797.28 (63%)	305.6 (82%)
3-3 	I x-x 43,122.5 (113%) I y-y 15,053.6 (107%)	345.2 (93%)
3-4 	I x-x 29,083.1 (76%) I y-y 7,608.4 (54%)	287.1 (77%)
3-5 	I x-x 52,124.1 (136%) I y-y 17,528.8 (125%)	364.6 (98%)
3-6 	I x-x 35,362.8 (92%) I y-y 22,723.6 (162%)	365.1 (98%)
3-7 	I x-x 50,266.7 (131%) I y-y 22,639.4 (161%)	354.9 (96%)

Fig.4

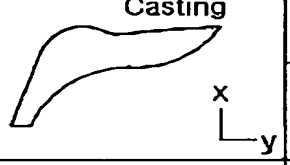
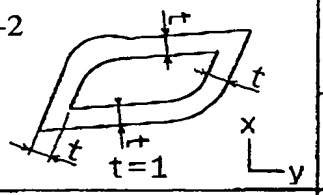
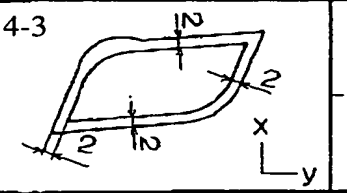
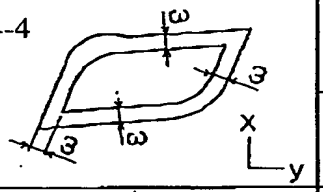
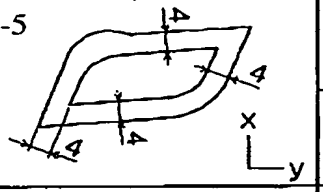
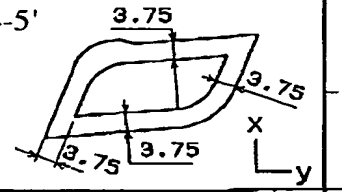
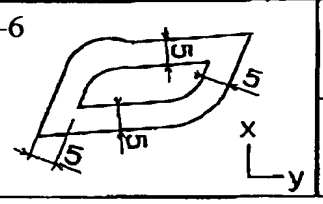
Cross-sectional shaping	Geometrical moments of inertia (mm^4)	Aerial size of cross section (mm^2)
Conventional shaping Casting 3-1 	I x-x 38,268.0 (100%) I y-y 14,054.8 (100%)	371.5 (100%)
4-2 	I x-x 19,711.4 (52%) I y-y 8,050.8 (57%)	125.3 (34%)
4-3 	I x-x 34,821.2 (91%) I y-y 12,899.5 (92%)	223.8 (60%)
4-4 	I x-x 45,708.5 (119%) I y-y 16,168.0 (115%)	310.5 (84%)
4-5 	I x-x 53,876.1 (141%) I y-y 18,346.4 (131%)	391.3 (105%)
4-5' 	I x-x 51,910.5 (136%) I y-y 17,875.1 (127%)	371.2 (100%)
4-6 	I x-x 59,806.5 (156%) I y-y 19,703.0 (140%)	462.0 (124%)

Fig.14(a)

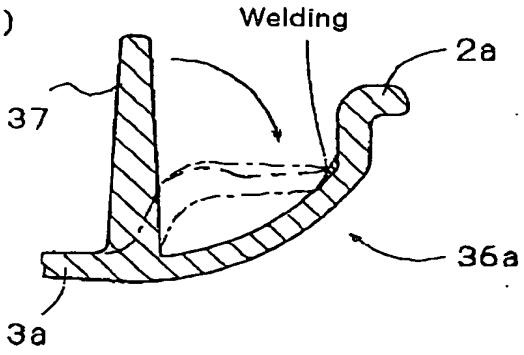


Fig.14(b)

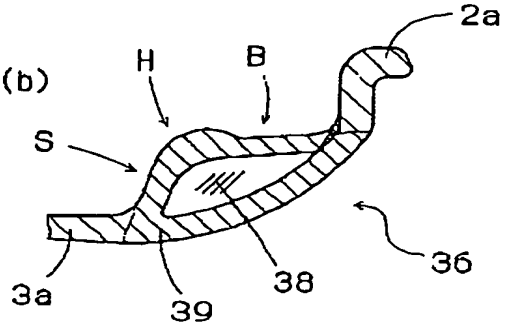
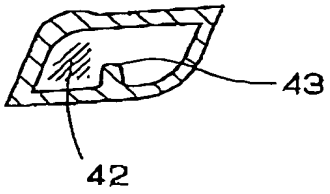



Fig.15